

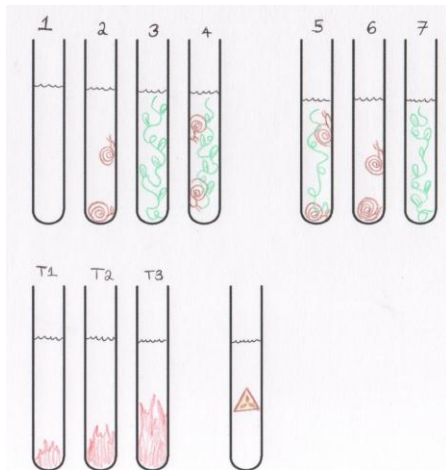
Plant and Animal Respiration Activity

Reflection

Meets NSTA 3 standard 1c

To help students effectively learn the objectives of this activity, I incorporated visual aids, technological applications, real-world issues, and inquiry-based questions. The students must set-up the lab on day one, which requires proper handling of live organisms, labeling equipment, managing controls and identifying variables. On day two and three of the lab they will be required to follow instructions for setting up and running their Probeware, which requires identifying proper probes, hooking up cables into their appropriate ports, using a computer, interpreting graph results, and building a graph.

The lab visually demonstrates three main content areas; interconnection between plant and animal respiration cycles, the importance of sunlight to plants, and the consequences of pollution and climate change on ecosystems. The use of live plants and animals helps in student interest, real-world application and integrative thinking. Learning about the respiration cycles separately may give students a false impression that the cycles are independent of each other. The lab, although it is set-up into three different sections, is highly effective at forcing students in comparing, contrasting and integrating the material.



On the second day when the students are concentrating on the release and uptake of CO_2 , they are required to use a pH probe. The students will learn the relationship between CO_2 concentration and pH level, which will further broaden their realization that science is highly integrative. The use of technology in this lesson allows them to visually see the differences in concentration; differences that would be far less meaningful if only verbally stated.

As the students approach the final part of the lab, they will use technology to measure O_2 , CO_2 , and pH levels, and

they will think about the technologies that are causing these changes in ecosystems; technologies and sources of pollution and climate change. I believe that technology can be both beneficial and harmful to society and the environment, and asking students to think critically about technology will help them be responsible citizens.

Finally, the students are responsible for drawing a hand generated graph, which is an important visual aid in seeing overall trends, identifying variables, and organizing thoughts. Practice in this area is vital in becoming a literate scientist because graphs are not only tested heavily on in standardized tests but they are normal inclusions in scientific literature.